UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,139	07/12/2005	Minne Van Der Veen	NL 030078	8361

24737   7590   09/01/2010
PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER
FUJITA, KATRINA R

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
09/01/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/542,139	VAN DER VEEN ET AL.
	Examiner	Art Unit
	KATRINA FUJITA	2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.
     4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-28* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *12 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
     a)☒ All   b)☐ Some *   c)☐ None of:
       1.☐ Certified copies of the priority documents have been received.
       2.☐ Certified copies of the priority documents have been received in Application No. _____ .
       3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date <u>01/23/2007</u>.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Specification

2.   The abstract of the disclosure is objected to because it contains reference

numerals from the drawings. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   Claims 2-7, 9, 11-19, 24 and 27 are rejected under 35 U.S.C. 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the

subject matter which applicant regards as the invention.

Claim 2 recites the limitation "embedding additional information" in line 2. It is unclear whether Applicant intends this to be the same as or different from the "additional information" in line 5 of claim 1. The following will be assumed for examination purposes: -- embedding <u>the</u> additional information --. Further clarification is required. The same applies to claim 3, line 3.

Claim 3 recites the limitation "inserting additional information" in line 1. It is unclear whether Applicant intends this to be the same as or different from the "additional information" in line 5 of claim 1. The following will be assumed for examination purposes: -- <u>the</u> additional information --.

Claim 4 recites the limitation "the difference" in line 6. There is insufficient antecedent basis for this limitation.

Claim 4 recites the limitation "the receiver" in line 8. There is insufficient antecedent basis for this limitation.

Claim 5 recites the limitation "the step of compressing" in line 1. There is insufficient antecedent basis for this limitation.

Claim 6 recites the limitation "the step of sending" in line 1. There is insufficient antecedent basis for this limitation.

Claim 6 recites the limitation "a receiver" in line 3. It is unclear whether Applicant is intending this to be the same as or different from the "receiver" in line 8 of claim 4. The following will be assumed for examination purposes: -- a̶ <u>the</u> receiver --. The same applies to claim 7, line 3.

Claim 7 recites the limitation "the steps of sending" in line 1. There is insufficient antecedent basis for this limitation.

Claim 9 recites the limitation "the step of selecting" in line 1. There is insufficient antecedent basis for this limitation.

Claim 9 recites the limitation "a first mapping function" in line 1. It is unclear whether Applicant intends this to be the same as or different from the "first mapping function" in line 4 of claim 1. The following will be assumed for examination purposes: -- a̶ the first mapping function --.

Claim 11 recites the limitation "the difference" in line 6. There is insufficient antecedent basis for this limitation.

Claim 12 recites the limitation "the amplitude values" in line 3. There is insufficient antecedent basis for this limitation.

Claim 13 recites the limitation "the step of processing" in line 1. There is insufficient antecedent basis for this limitation.

Claim 14 recites the limitation "the step of mapping" in line 1. There is insufficient antecedent basis for this limitation.

Claim 15 recites the limitation "the steps of receiving" in line 1. There is insufficient antecedent basis for this limitation.

Claim 16 recites the limitation "the step of receiving" in line 1. There is insufficient antecedent basis for this limitation.

Claim 17 recites the limitation "the amplitude values" in line 3. There is insufficient antecedent basis for this limitation.

Claim 18 recites the limitation "embedding additional information" in line 3. It is

unclear whether Applicant intends this to be the same as or different from the "additional

information" in line 5 of claim 17. The following will be assumed for examination

purposes: -- embedding the additional information --. Further clarification is required.

The same applies to claim 19, line 2.

Claim 24 recites the limitation "the amplitude values" in line 4. There is

insufficient antecedent basis for this limitation.

Claim 27 recites the limitation "the amplitude values" in line 4. There is

insufficient antecedent basis for this limitation.

Claim Rejections - 35 USC § 101

5.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

6.   Claim 28 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. Claim 28 is drawn to a signal, and is thus non-

statutory.

"A transitory, propagating signal ... is not a "process, machine, manufacture, or

composition of matter." Those four categories define the explicit scope and reach of

subject matter patentable under 35 U.S.C. § 101; thus, such a signal cannot be

patentable subject matter." (*In re Nuijten*, 84 USPQ2d 1495 (Fed. Cir. 2007)).

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in
> public use or on sale in this country, more than one year prior to the date of application for patent in
> the United States.

8.   Claims 1-3, 12, 13, 17-19, 24, 27 and 28 are rejected under 35 U.S.C. 102(b) as

being anticipated by Vleeschouwer et al. ("Circular Interpretation...", IEEE).

Regarding **claim 1**, Vleeschouwer et al. discloses a method of sending additional

information in a signal having media content comprising the steps of:

mapping the amplitude values of the media content onto first new values using a

first mapping function ("pixels of each zone are mapped and transformed according to

sequence (a) and (b)" at Figure 4 description), and

inserting the additional information into the mapped media content ("Relative

positions of center of mass of both zones convey the embedded information." at Figure

4 description; "The embedding process hides a binary message, i.e. the watermark

payload, into a picture" at page 346, fourth to last sentence).

Regarding **claim 2**, Vleeschouwer et al. discloses a method wherein the first

mapping function creates at least one hole in the amplitude values of the mapped media

content to be used for embedding additional information (as with the method displayed

by Figure 3, the pixel values of the histogram are shifted such that the watermark

payload may be embedded).

Regarding **claim 3**, Vleeschouwer et al. discloses a method wherein the step of

inserting additional information comprises using said at least one hole and a

corresponding value of the mapped media content for embedding additional data (as

with the method displayed by Figure 3, the pixel values of the histogram are shifted

such that the watermark payload may be embedded).

Regarding **claim 12**, Vleeschouwer et al. discloses a method of receiving

additional information in a signal having media content, comprising the steps of:

receiving a signal including media content the amplitude values of which have

been mapped onto first new values using a first mapping function together with

embedded additional information ("pixels of each zone are mapped and transformed

according to sequence (a) and (b)" at Figure 4 description; "Relative positions of center

of mass of both zones convey the embedded information." at Figure 4 description; "The

embedding process hides a binary message, i.e. the watermark payload, into a picture"

at page 346, fourth to last sentence), and

removing the additional information from the media content ("an alternative

mapping and extraction strategy are proposed in Fig.4" at page 347, last paragraph, line

4).

Regarding **claim 13**, Vleeschouwer et al. discloses a method further including

the step of processing the additional information (reliability of payload detection is

evaluated in figure 5.

Regarding **claim 17**, Vleeschouwer et al. discloses a device (implied that the embedding and extraction is performed by a computer system or the like; see figures 1 and 2) providing additional information in a signal having media content, comprising:

a first mapping unit arranged to map the amplitude values of the media content onto first new values using a first mapping function ("pixels of each zone are mapped and transformed according to sequence (a) and (b)" at Figure 4 description), and

a multiplexing unit for inserting the additional information into the mapped media content ("Relative positions of center of mass of both zones convey the embedded information." at Figure 4 description; "The embedding process hides a binary message, i.e. the watermark payload, into a picture" at page 346, fourth to last sentence).

Regarding **claim 18**, Vleeschouwer et al. discloses a device wherein the first mapping unit is arranged to create at least one hole in the amplitude values of the mapped media content to be used for embedding additional information (as with the method displayed by Figure 3, the pixel values of the histogram are shifted such that the watermark payload may be embedded).

Regarding **claim 19**, Vleeschouwer et al. discloses a device wherein the multiplexing unit is arranged to use said at least one hole and a corresponding value of the mapped media content for embedding additional data (as with the method displayed by Figure 3, the pixel values of the histogram are shifted such that the watermark payload may be embedded).

Regarding **claim 24**, Vleeschouwer et al. discloses a device (implied that the
embedding and extraction is performed by a computer system or the like; see figures 1
and 2) for receiving additional information in a signal having media content, comprising:

a demultiplexing unit arranged to:

receive a signal including media content the amplitude values of which have
been mapped onto first new values using a first mapping function together with
embedded additional information ("pixels of each zone are mapped and transformed
according to sequence (a) and (b)" at Figure 4 description; "Relative positions of center
of mass of both zones convey the embedded information." at Figure 4 description; "The
embedding process hides a binary message, i.e. the watermark payload, into a picture"
at page 346, fourth to last sentence), and

remove the additional information from the media content ("an alternative
mapping and extraction strategy are proposed in Fig.4" at page 347, last paragraph, line
4).

Regarding **claim 27**, Vleeschouwer et al. discloses a system of devices that can
communicate with each other comprising:

a device (implied that the embedding and extraction is performed by a computer
system or the like; see figures 1 and 2) providing additional information in a signal
having media content, comprising:

a first mapping unit arranged to map the amplitude values of the media content
onto first new values using a first mapping function ("pixels of each zone are mapped
and transformed according to sequence (a) and (b)" at Figure 4 description), and

a multiplexing unit for inserting the additional information into the mapped media content ("Relative positions of center of mass of both zones convey the embedded information." at Figure 4 description; "The embedding process hides a binary message, i.e. the watermark payload, into a picture" at page 346, fourth to last sentence), and

a device (implied that the embedding and extraction is performed by a computer system or the like; see figures 1 and 2) for receiving additional information in a signal having media content, comprising:

a demultiplexing unit arranged to receive a signal including media content the amplitude values of which have been mapped onto first new values using said first mapping function together with additional embedded information ("pixels of each zone are mapped and transformed according to sequence (a) and (b)" at Figure 4 description; "Relative positions of center of mass of both zones convey the embedded information." at Figure 4 description; "The embedding process hides a binary message, i.e. the watermark payload, into a picture" at page 346, fourth to last sentence), and remove the additional information from the media content ("an alternative mapping and extraction strategy are proposed in Fig.4" at page 347, last paragraph, line 4).

Regarding **claim 28**, Vleeschouwer et al. discloses a signal (image) comprising media content with embedded additional information, where the amplitude values of the media content have been mapped onto first new values using a first mapping function ("pixels of each zone are mapped and transformed according to sequence (a) and (b)" at Figure 4 description), such that the additional information can be retrieved from the mapped media content ("Relative positions of center of mass of both zones convey the

embedded information." at Figure 4 description; "The embedding process hides a binary

message, i.e. the watermark payload, into a picture" at page 346, fourth to last

sentence).

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 4-11, 14-16, 20-23, 25 and 26 are rejected under 35 U.S.C. 103(a) as

being unpatentable over the combination of Vleeschouwer et al. and Xuan et al.

("Lossless Image Watermarking...", ICDIA '02).

        Regarding **claim 4**, Vleeschouwer et al. discloses a method wherein the step of

mapping includes allowing the use of one first new value of the media content to

correspond to more than one unmapped value of the original media content ("In that

case, pixels with close luminance values form a compact kernel on the circle. Instead of

the principal axes, the center of mass is used to characterize the position of this kernel.

As close luminance values are gathered on the circle, a small image distortion only

slightly moves the pixels and do not significantly impact the retrieval reliability" at page

347, last paragraph, line 5).

Vleeschouwer et al. does not disclose mapping the first new values of the media content onto second new values using a second mapping function.

Xuan et al. discloses a method in the same field of endeavor of watermarking, comprising the steps of:

mapping the first new values ("inverse wavelet transformation" at Table 1, #4) of the media content onto second new values using a second mapping function ("2nd histogram adjustment" in Table 1, #5).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize a second mapping as taught by Xuan et al. to adjust the values of Vleeschouwer et al. to help improve the amount of data that can be embedded while still maintaining imperceptibility of the watermark (see Xuan et al. at section 4).

The Vleeschouwer et al. and Xuan et al. combination does not disclose generating an error signal comprising the difference between the second new values of the media content and the original media content, and sending the error signal to the receiver.

However, it is well-known in the art to use error checking in watermarking to ensure that particular watermarking steps do not introduce an exorbitant amount of error in the final image and to be able to recover the original image by understanding the amount of error introduced in the process. Therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize an error checking process on the mapped values of the Vleeschouwer et al. and Xuan et al. combination

to make sure that a certain quality is maintained throughout the watermarking process and to give the decoder the ability to recover the watermark and original image signal.

Regarding **claim 5**, the Vleeschouwer et al. and Xuan et al. combination discloses a method further including the step of compressing the error signal ("The watermarked image is then compressed using JPEG" at page 350, line 2; as error signals are normally embedded in the image information, it too will be compressed).

Regarding **claim 6**, the Vleeschouwer et al. and Xuan et al. combination further comprising the step of sending the media content that has been mapped using the first mapping function together with the additional information to a receiver, wherein the error signal is included in the media content sent to the receiver (error signals are normally embedded in the image information).

Regarding **claim 7**, the Vleeschouwer et al. and Xuan et al. combination further comprising the steps of sending the media content that has been mapped using the first mapping function together with the additional information to a receiver (extractor as in figures 1 and 2), and sending information about first and/or second mapping function used to the receiver (error signal will contain information about the second mapping function as it is generated as a result of the second mapping).

Regarding **claim 8**, the Vleeschouwer et al. and Xuan et al. combination wherein the information about second mapping function used is included in the media content sent to the receiver (error signal will contain information about the second mapping function as it is generated as a result of the second mapping).

Regarding **claim 9**, the Vleeschouwer et al. and Xuan et al. combination discloses at least two first mapping functions (see Vleeschouwer et al. at figures 3 and 4).

The Vleeschouwer et al. and Xuan et al. combination does not disclose the step of selecting a first mapping function among at least two first mapping functions and performing the step of mapping using the selected function for at least a part of the media content.

However, as explained in Vleeschouwer et al., there are tradeoffs to both mapping functions (see page 347, last two paragraphs). Depending on the situation that the mapping is to be used, using one mapping function over the other is a benefit. Therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to allow a selection step of mapping functions in the Vleeschouwer et al. and Xuan et al. combination such that the system can accommodate multiple types of images where the most ideal watermarking scheme can be chosen, thereby improving the results.

Regarding **claim 10**, the Vleeschouwer et al. and Xuan et al. combination discloses a method wherein the step of selecting is performed in dependence of properties of the media content (see discussion in claim 9 above).

Regarding **claim 11**, the Vleeschouwer et al. and Xuan et al. combination discloses a method further including the steps of:

selecting a second mapping function among at least two second mapping functions (see discussion of claim 9 above), mapping the first new values of the

amplitude of the media content using the second mapping function onto second new values for parts of the media content mapped according to the selected first mapping function (see discussion of claim 4 above), and

generating an error signal comprising the difference between the second mapped media content and the original media content for the selected first and second mapping functions (see discussion of claim 4 above).

Regarding **claim 14**, Vleeschouwer et al. discloses the elements of claim 12 as described above.

Vleeschouwer et al. does not disclose the step of mapping the amplitude of the received first new values of the media content onto second new values using a second mapping function.

Xuan et al. discloses a method in the same field of endeavor of watermarking, comprising the steps of:

mapping the amplitude of the received first new values ("inverse wavelet transformation" at Table 1, #4) of the media content onto second new values using a second mapping function ("2nd histogram adjustment" in Table 1, #5).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize a second mapping as taught by Xuan et al. to adjust the values of Vleeschouwer et al. to help improve the amount of data that can be embedded while still maintaining imperceptibility of the watermark (see Xuan et al. at section 4).

Regarding **claim 15**, the Vleeschouwer et al. and Xuan et al. combination discloses the elements of claim 14 as described above.

The Vleeschouwer et al. and Xuan et al. combination does not disclose the steps of receiving an error signal corresponding to an error between the original media content and media content mapped with the second mapping function and adjusting the media content mapped using the second mapping function with the error signal.

However, it is well-known in the art to use error checking in watermarking to ensure that particular watermarking steps do not introduce an exorbitant amount of error in the final image and to be able to recover the original image by understanding the amount of error introduced in the process. Therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize an error checking process on the mapped values of the Vleeschouwer et al. and Xuan et al. combination to make sure that a certain quality is maintained throughout the watermarking process and to give the decoder the ability to recover the watermark and original image signal.

Regarding **claim 16**, the Vleeschouwer et al. and Xuan et al. combination discloses a method further including the step of receiving first or second mapping function information and applying a second mapping function according to this information on at least parts of the received media content ("2nd histogram adjustment" in Table 1, #5).

Regarding **claim 20**, Vleeschouwer et al. discloses the elements of claim 17 as described above.

Vleeschouwer et al. does not disclose a second mapping unit arranged to map the first new values of the media content onto second new values using a second mapping function.

Xuan et al. discloses a device in the same field of endeavor of watermarking, comprising the steps of:

a second mapping unit arranged to map the first new values ("inverse wavelet transformation" at Table 1, #4) of the media content onto second new values using a second mapping function ("2nd histogram adjustment" in Table 1, #5).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize a second mapping as taught by Xuan et al. to adjust the values of Vleeschouwer et al. to help improve the amount of data that can be embedded while still maintaining imperceptibility of the watermark (see Xuan et al. at section 4).

The Vleeschouwer et al. and Xuan et al. combination does not disclose a subtracting unit arranged to subtract the original media content from the second new values of the media content for providing an error signal.

However, it is well-known in the art to use error checking in watermarking to ensure that particular watermarking steps do not introduce an exorbitant amount of error in the final image and to be able to recover the original image by understanding the amount of error introduced in the process. Therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to utilize an error checking process on the mapped values of the Vleeschouwer et al. and Xuan et al. combination to make sure that a certain quality is maintained throughout the watermarking process and to give the decoder the ability to recover the watermark and original image signal.

Regarding **claim 21**, the Vleeschouwer et al. and Xuan et al. combination discloses a device wherein the multiplexing unit is arranged to insert the error signal in

the first new values of the media content (error signals are normally embedded in the image information).

Regarding **claim 22**, the Vleeschouwer et al. and Xuan et al. combination discloses at least two first mapping units performing two different mapping functions (see Vleeschouwer et al. at figures 3 and 4).

The Vleeschouwer et al. and Xuan et al. combination does not disclose a first switch arranged to connect the original media content to either one of the first mapping units.

However, as explained in Vleeschouwer et al., there are tradeoffs to both mapping functions (see page 347, last two paragraphs). Depending on the situation that the mapping is to be used, using one mapping function over the other is a benefit. Therefore, it would have been obvious at the time the invention was made to one of ordinary skill in the art to allow a selection step of mapping functions in the Vleeschouwer et al. and Xuan et al. combination such that the system can accommodate multiple types of images where the most ideal watermarking scheme can be chosen, thereby improving the results.

Regarding **claim 23**, the Vleeschouwer et al. and Xuan et al. combination discloses a device further comprising at least two mapping units performing two different second mapping functions and each arranged to map first new values of the media content onto second new values (see discussion of claim 22), a subtracting unit arranged to subtract original media content from second new values of the media content for providing an error signal (see discussion of claim 20), a further switch

arranged to connect the first new values of the media content to either one of the

mapping units performing a second mapping function and yet a further switch arranged

to connect either one of the mapping units performing a second mapping function to the

subtracting unit (see discussion of claim 22).

Regarding **claim 25**, Vleeschouwer et al. discloses the elements of claim 24 as

described above.

Vleeschouwer et al. does not disclose a third mapping unit arranged to map the

first new values of the media content onto second new values using a second mapping

function.

Xuan et al. discloses a device in the same field of endeavor of watermarking,

comprising the steps of:

a third mapping unit arranged to map the first new values ("inverse wavelet

transformation" at Table 1, #4) of the media content onto second new values using a

second mapping function ("2nd histogram adjustment" in Table 1, #5).

It would have been obvious at the time the invention was made to one of ordinary

skill in the art to utilize a second mapping as taught by Xuan et al. to adjust the values

of Vleeschouwer et al. to help improve the amount of data that can be embedded while

still maintaining imperceptibility of the watermark (see Xuan et al. at section 4).

Regarding **claim 26**, the Vleeschouwer et al. and Xuan et al. combination

discloses the elements of claim 25 as described above.

The Vleeschouwer et al. and Xuan et al. combination does not disclose an
adding unit arranged to add a received error signal to the second new values of the
media content for providing at least essentially lossless media content.

However, it is well-known in the art to use error checking in watermarking to
ensure that particular watermarking steps do not introduce an exorbitant amount of error
in the final image and to be able to recover the original image by understanding the
amount of error introduced in the process. It is further understood that error signals are
normally embedded in the image information. Therefore, it would have been obvious at
the time the invention was made to one of ordinary skill in the art to utilize an error
checking process on the mapped values of the Vleeschouwer et al. and Xuan et al.
combination to make sure that a certain quality is maintained throughout the
watermarking process and to give the decoder the ability to recover the watermark and
original image signal.

Conclusion

11.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to KATRINA FUJITA whose telephone number is
(571)270-1574. The examiner can normally be reached on M-Th 8-5:30pm, F 8-
4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Katrina Fujita/
Examiner, Art Unit 2624

/VIKKRAM BALI/
Supervisory Patent Examiner, Art Unit 2624